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International Bureau

## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6: <b>C12Q 1/68</b>		(11) International Publication Number: <b>WO 98/30722</b>	
		(43) International Publication Date: 16 July 1998 (16.07.98)	
(21) International Application Number: <b>PCT/US98/01206</b>		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).	
(22) International Filing Date: 12 January 1998 (12.01.98)		<p><b>Published</b> With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</p>	
(30) Priority Data: 60/035,327 13 January 1997 (13.01.97) US 60/049,627 13 June 1997 (13.06.97) US			
(63) Related by Continuation (CON) or Continuation-in-Part (CIP) to Earlier Applications US 60/035,327 (CON) Filed on 13 January 1997 (13.01.97) US 60/049,627 (CON) Filed on 13 June 1997 (13.06.97)			
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(54) Title: EXPRESSION MONITORING FOR GENE FUNCTION IDENTIFICATION

## (57) Abstract

This invention provides methods, compositions and apparatus for mapping the regulatory relationship among genes by massive parallel monitoring gene expression. In some embodiments, mutations in the up-stream regulatory genes are detected by monitoring the change in down-stream gene expression. Similarly, the function of a specific mutation in an up-stream gene is determined by monitoring the down-stream gene expression. In addition, regulatory function of a target gene can be determined by monitoring the expression of a large number of down-stream genes. The invention also provides specific embodiments for detecting p53 functional homozygous and heterozygous mutations and for determining the function of p53 mutations.

US-PCT

13.1.97 — 13.1.98 — 16.7.98

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PCT  
Publ. 16.8.98

99  
Jul

National Phase

IPEA sendet an  
ausgew. Amt.  
Beitrag bei EPO.  
Erteilt in Prüf.-

Allen ersicht: A 36 (3)a A 38